

Ultrasonic Concentration Sensor for Monitoring Liquids



- Highly precise measurement of Sound Velocity and Temperature
- Determination of concentration in w/w%, v/v%, oBrix, %Extract and other sound velocity calculable scales
- Available as Sensor and Transmitter with local display/keypad
- Analog and digital In-/Outputs, optional Profibus
- Long run stable, low response time
- Maintenance free, Hygienic Construction, CIP-capable

Technical Data:

Measuring range:	400 – 3000 m/s
Accuracy:	+/-0,05 m/s
Reproducibility:	+/-0,01 m/s
Response time:	≤ 1 sec
Temperature comp.:	PT1000
Temperature range, Medium:	-25°C - +125 °C
Pressure range:	Max. 16 bar
Material in contact with medium:	Stainless steel 1.4404 (AISI 316L) Optional: 1.4571 (AISI 316 Ti) s/s, Hastelloy C276, Monel 400, Incoloy 825, Tantalum; others on request
Process Connection:	- Varivent® DN65 - Dairy DIN11851 DN65 - others on request
Communication, Sensor (without local display/keypad):	Profibus DP
Inputs, Transmitter:	- 6x digital (24 VDC)
Outputs, Transmitter:	- 3x digital (24 VDC) - 2x analog (4-20 mA)
Optional, Transmitter:	Profibus DP
Enclosure rating:	IP 65
Power supply:	24 VDC
Explosion protection (optional):	Ex II 2G Eex d IIC T6

The Sonatec Ultrasonic Concentration Sensor/Transmitter is a highly precise means of determining the sound velocity of liquids. Like density measurements, sound velocity is a material and concentration dependent quantity which can be used for determining the concentration of a liquid. The propagation time of a piezo-ceramic generated sound pulse is measured between the prongs of a fork-shaped measuring head installed directly in the process. As this propagation time changes, the sound velocity and resulting concentration changes are measured. The temperature dependence of the sound velocity measurement is compensated through the electronic measurement of parallel PT1000 temperature elements. From these measurement signals, calculated concentrations are obtained and displayed in Mass%, Volume%, °Brix, %Extract or other sound velocity calculable quantities of the measured medium. Due to the simple mechanical design without any movable parts, the sensor is very reliable and virtually maintenance free. The use of this technology with specific measurement software has a proven track record for liquids with dissolved and un-dissolved components, both organic and inorganic.

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